

Claims

1. In a communication system comprising
5 - a gateway node (3) arranged to establish communications between a first communication network (1) and a second circuit-switched communication network (2) via a plurality of given circuit-switched channels (ch1, ..., chn) of said second communication network (2), said
10 given circuit-switched channels (ch1, ..., chn) being associated with said gateway node (3), and
- at least two control entities (4,5) arranged to control communications between said first and second networks, where each of said control entities (4, 5) is
15 allocated a respective group of said given channels for control,
- a method for reallocating said given circuit-switched channels among said control entities, comprising:
- 20 automatically monitoring (S1) one or more sources (31, 41, 51) of communication performance information,
- on the basis of data received from said one or more
25 sources (31, 41, 51) of communication performance information, automatically determining (S2) whether a reallocation triggering condition is met, and
- if said reallocation triggering condition is met,
30 automatically performing a reallocation procedure (S3) for calculating a reallocation of said given circuit-switched channels (ch1, ..., chn) among said control entities (4, 5).
- 35 2. The method of claim 1, wherein said circuit-switched channels (ch1, ..., chn) are time division multiplex channels.

3. The method of one of the preceding claims, wherein said automatic monitoring (S1) one or more sources (31, 41, 51) of communication performance information comprises
5 one or both of the following:
- comparing a number of momentarily occupied circuit-switched channels among the circuit-switched channels allocated to a particular control entity (4, 5) with one or more predetermined occupation thresholds, and
10 - comparing a time average of a number of occupied circuit-switched channels among the circuit-switched channels allocated to a particular control entity (4, 5) with one or more predetermined traffic thresholds.
- 15 4. The method of one of the preceding claims, wherein said reallocation procedure (S3) comprises discriminating between reallocatable and non-reallocatable circuit-switched channels, where the calculating of a reallocation of circuit-switched channels is only
20 performed for the reallocatable circuit-switched channels.
5. The method of one of the preceding claims, wherein the step (S2) of automatically determining if a reallocation
25 triggering condition is met comprises checking whether data received from said one or more sources (31, 41, 51) of communication performance information fulfills one or more rules.
- 30 6. The method of claim 5, wherein said one or more rules are user configurable.
7. The method of one of the preceding claims, wherein said reallocation procedure (S3) comprises a step (S31) of
35 checking whether a condition for automatic reallocation execution is fulfilled, and if the condition is fulfilled, executing (S32) the calculated reallocation,

and otherwise outputting (S33) an indication to a user that a reallocation has been calculated.

- 5 8. The method of claim 7, wherein after having output said indication to a user that a reallocation has been calculated, said reallocation procedure waits for a user confirmation input, and if said user confirmation is input, executing (S32) the calculated reallocation.
- 10 9. The method of claim 8, wherein while waiting for said user confirmation input, said reallocation procedure (S3) determines (S36), on the basis of the momentary data received from said one or more sources of communication performance information, whether the
15 calculated reallocation for which said indication was output is still needed, and if not, disables (S37) the user confirmation.
- 20 10. The method of one of claims 7 to 9, wherein said condition for automatic reallocation execution is the presence of one or more of a predetermined timing value, a predetermined flag setting, and a predetermined signal.
- 25 11. The method of one of the preceding claims, wherein each calculated reallocation is recorded together with a time-stamp and information associated with the reallocation triggering condition that triggered the reallocation calculation.
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12. A computer program arranged to execute the method of one of the preceding claims when loaded into and executed on a data processing device connected to one or both of said gateway node (3) and said control entities (4,5).
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13. In a communication system comprising

- a gateway node (3) arranged to establish communications between a first communication network (1) and a second circuit-switched communication network (2) via a plurality of given circuit-switched channels (ch1, ..., chn) of said second communication network (2), said given circuit-switched channels (ch1, ..., chn) being associated with said gateway node (3), and
- at least two control entities (4,5) arranged to control communications between said first and second networks, where each of said control entities (4, 5) is allocated a respective group of said given channels for control,

a device (6) for reallocating said given circuit-switched channels (ch1, ..., chn) among said control entities (4, 5), comprising:

an automatic monitor (66) for automatically monitoring one or more sources (31, 41, 51) of communication performance information, and for automatically determining whether a reallocation triggering condition is met, on the basis data received from said one or more sources (31, 41, 51) of communication performance information, and

an automatic reallocator (65) responding to said automatic monitor (66), for automatically performing a reallocation procedure for calculating a reallocation of said given circuit-switched channels (ch1, ..., chn) among said control entities (4, 5).

14. The device (6) of claim 13, wherein said automatic monitor (66) and/or said sources (31, 41, 51) of communication performance information comprise one or both of the following:
- a channel occupation monitor for comparing a number of momentarily occupied circuit-switched channels among the

circuit-switched channels allocated to a particular control entity (4, 5) with one or more predetermined occupation thresholds, and

- 5 - a traffic volume monitor for comparing a time average of a number of occupied circuit-switched channels among the circuit-switched channels allocated to a particular control entity (4, 5) with one or more predetermined traffic thresholds.

10 15. The device (6) of claim 13 or 14, furthermore comprising an event log memory (62) for recording each calculated reallocation together with a time-stamp and information associated with the reallocation triggering condition that triggered the reallocation calculation.

15 16. The device (6) of one of claims 13 to 15, further comprising a rule data base memory (64) accessible by said automatic monitor (66), said automatic monitor (66) being arranged to automatically determine whether a
20 reallocation triggering condition is met by checking whether data received from said one or more sources (31, 41, 51) of communication performance information fulfills one or more rules stored in said rule data base memory (64).

25 17. The device (6) of claim 16, further comprising a user interface (61) connected to said rule data base memory (64), said user interface (61) and said rule data base memory (64) being arranged such that the rules stored in
30 said rule data base memory (64) can be configured via said user interface (61).

 18. The device (6) of one of claims 13 to 17, wherein said
35 automatic reallocator (65) is arranged to check whether a condition for automatic reallocation execution is fulfilled, and if the condition is fulfilled, to execute

the calculated reallocation, and otherwise to output an indication that a reallocation has been calculated.

19. The device (6) of one of claims 13 to 18, further
5 comprising one or more interface adapters (67, 68), each being arranged to convert a format used inside the device (6) into an interface format used in a node with which the interface adapter is designed to be connected.